

WITH THE FARMERS

By Prof. W. F. MASSEY

Thursday, September 4, 1913.



W. F. Massey.

How Rock Phosphate.

Some of the best authorities, like Dr. Hopkins, Illinois, advocate the use of the pulverized phosphate rock rather than acid phosphate.

Dr. Hopkins last summer at the Farmers' Convention in Raleigh, N. C., urged the use of ground phosphate rock and ground limestone.

This is a fine article for a poor farmer, but a poor one for a poor farmer in the prairie soil, where Dr. Hopkins works in Illinois, the soil is well supplied with humus, and in such a soil the humic acids will bring their raw phosphate into the soil.

Applied to the average old worn Southern soils it will be a good while before it comes into use by plant roots.

But the farmer who has a clear soil to turn for his corn or his feeding stock and making manure, can use the pulverized rock economically and with good results. Mixed with the stable manure it will about treble its efficiency of the manure, and applied when organic matter is turned under it will soon become available. It avoids the tendency to acidity that acid phosphate causes, and will make less liming necessary. Several years ago at the Pennsylvania State Farmers' Institute at Allentown, I met a farmer from Eastern Pennsylvania, who asked me what I thought of the Tennessee pulverized phosphate rock. I told him that if it was properly used it was valuable. He said that he and two of his neighbors had been using it for several years, at a cost of \$7.50 per ton delivered at their station.

He said they were the only farmers in that neighborhood who were getting good crops of red clover, as all around them the soil had gotten so acid that clover refused to thrive where the farmers had been depending on acid phosphate continually.

As I have said, the farmer who farms right does not need to buy nitrogen, and in the best wheat soils in the whole country, there is usually an abundant store of potash. It comes to the point where the farmer is really only concerned in the getting of phosphorus, and in what combination he shall get this, is the question of vital importance to him. As a rule, I would prefer to use the Thomas phosphate because of the lime it carries, and its tendency to keep the soil sweet. But there is no doubt that where the pulverized phosphate rock can be had from \$7 to \$8 a ton, it can be profitably employed if the farmer is really farming and not merely cultivating land and depending on bought fertilizers for his crops.

And also, where ground limestone can be had at the kilns for \$1 a ton, as it can in Virginia, I had rather use this than burnt lime, using it in double the amount I would use the burnt lime.

Mixing a Fertilizer.

In mixing a complete fertilizer of certain percentages, all you need to know is the amount of the plant food carried by each article used. You want a fertilizer contain 8 per cent phosphoric acid in a ton. This simply means that you want 160 pounds of phosphoric acid. Now if you use acid phosphate that has sixteen pounds in each 100 pounds, you need 1,000 pounds to get the 160 pounds. That is, 1,000 pounds of the 16 per cent acid phosphate will make 8 per cent in the ton.

On with the various other things used to get nitrogen and potash. But getting the per cent is the key to the pounds of acid phosphate, and then using cotton seed meal to get nitrogen. You will be adding more phosphoric acid and a little potash, and to be exact, you will have to diminish the amount of the acid phosphate to allow for what the cotton seed meal or ash scrap will furnish. You can get tables showing the percentages of the various plant foods in the different materials used, and by remembering that the percentage in a ton means the number of pounds in each 100 pounds, and you can easily make from the various materials the percentages needed.

I have tried in this to reply to a number of questions from others, and if there are still any points untouched, I will be glad to give further ideas on the fertilizer subject, which attracts so much of the attention of farmers in general, and the economical use of which is of such vital importance in our agriculture.

Chemical fertilizers are a necessity in modern farming, and it is important for every farmer to know what he needs to buy, and what he can get in abundance without buying. Many a farmer has grown poor while depending on fertilizers alone to make his crops, while others have made money and improved their land through the more intelligent and liberal use of fertilizing chemicals.

Lime Marl.

From Fauquier County, "Please advise me about the value of the agricultural lime marl now being offered for sale from Rockingham at \$2.27 per ton in bulk." I know nothing about this marl except what is stated in the booklet they issue, and in which they make some rather extravagant claims for their marl. If this marl is as high in carbonate of lime as is claimed, it should be a very good article to apply to the land for any purpose for which lime is used. As ground limestone can be had for \$1 a ton, it would seem that the price of \$2.27 per ton is rather high for the marl, and as compared with ground limestone of good quality at \$1 a ton, I would prefer the ground limestone. Either will be used, not as a fertilizer, as it is not a fertilizer, but for restoring the sweetness of the soil, and making it capable of growing the legumes with success, and rather see a report from the State chemist or the Experiment Station as to the quality of this marl. The shell marl of the coast section has been used with great benefit in the Pamlico section, and there is no doubt that a good marl, rich in lime carbonate, will easily take the place of burnt lime, and will be free from the objection urged by some in regard to the caustic character of burnt lime. I think that it would be wise to consult the Virginia Experiment Station in regard to the marl. They will be able, I suppose, to tell you more about it than I can, as they probably have had a chance to examine it.

Another correspondent writes from North Carolina that he has land he is sure needs lime, and he can buy this same lime marl for \$3.95 per ton delivered at his station across the line. He says that burnt lime will cost him \$5 to \$10 a ton, and ground limestone \$7.50. These are extravagantly high prices, for he can buy the ground limestone in Virginia for \$1 a ton in bulk in carloads, and burnt lime for \$3.50, and the freight should not run these up

anywhere near the prices named. As I have told the first inquirer, I know nothing about the marl, but what they claim in their booklet. If their claim of 32 per cent of lime carbonate is correct, the marl will be the cheapest for him under the conditions named. But as he has to haul it five miles, the matter of hauling either the marl or the ground rock in double the amount of burnt lime will count. I would rather both of these correspondents would consult the Virginia Experiment Station at Blacksburg, Va.

Fertilizer for Wheat.

A correspondent in Louisiana County signs his letter "Reader." I will reply, but wish to say that hereafter I will take no notice of letters without the writer's name. Every one can see that I use no names in the paper, and that it is not proper courtesy to ask for information and fail to sign your name. I want to sow corn land in wheat and some in oats, and want to use the best fertilizer possible. Please tell me what analysis to use. What does basic slag contain? Is it worth using?

The writer further asks for a reply in the next paper. This is always impossible, for this matter has to be prepared ahead of the printer, and it is usually a week before a reply appears. Now to tell you what would be the best fertilizer, knowing nothing but that you live in Louisiana, and are going to sow wheat and oats on corn land, would be too much like quackery. I am told nothing in regard to the condition of your soil or its previous treatment. As a rule, on red lands in Louisiana I would not use potash in a fertilizer, if the land is farmed right, and a rotation is practiced in which peas and clover come in on the land frequently. If there are peas in the corn, the wheat on corn land will need nitrogenous fertilizer, and this will bring you down to the phosphorus needed as it is certain to be needed. Then you can use 100 pounds of acid phosphate or of basic slag an acre.

Basic slag, as I have heretofore explained, is the by-product from extracting phosphorus from iron making steel by the basic process. It carries 15 to 20 per cent of phosphoric acid and 10 per cent of lime. The usual article is the 15 per cent grade. Now, if you have corn where there has been no clover or peas, you will have to spend more money for fertilizer and will need a complete one. For, though your soil contains a great deal of potash, it is in an insoluble state, and it takes good farming with plenty of humus-making material and occasional liming to bring this into use, and depending solely on fertilizer you will need nitrogen, phosphoric acid and potash, all of which could have been saved if you farm right. To make a complete mixture for wheat and oats under such conditions, mix 1,200 pounds of acid phosphate 16 per cent grade, 600 pounds of tankage or of cottonseed meal, and 200 pounds of muriate of potash to make a ton, and of this use 3.0 pounds an acre. Cut the corn and shock it, and then disk the land as possible, but do not reseed deeply that late in the season.

Coupons for Manure and Hay.

"I have nine acres in cowpeas and soy beans. Four of these acres I wish to plow under for green manure, and cut the remainder for hay. At what time should I plow under the peas and soy beans? They are now nearly grown. Turn the peas under when fully mature and the pods ripe, and then sow crimson clover as a winter cover. The peas that are to be cut for hay should stand till the pods are full and turning yellow, but not ripe and dry, for then the leaves will be falling.

Sowing Peas and Baling the Hay.

"I will soon be ready to gather my peas and harvest the vines, and would like you to suggest the best way to hull and bale the hay. I have a pea huller, would you advise baling the vines as soon as they are hulled, or in other words, what condition should the vines be in to be baled?"

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MARKET IS WEAK THROUGH SESSION

Numerous Declines Scored, and Day Is Disappointment to Bulls.

By Broadan Wall.

New York, September 3.—To-day's stock market developed weakness with the opening, and never recovered a firm tone throughout the session. Numerous declines were scored, some of them violent, and altogether the day was a disappointment to the bulls.

Amalgamated Copper opened a full point below the previous day's close, and distinct pressure in New York Central, New Haven and Reading featured the early dealings.

News was unsettling. Railroad earnings continued to show a decrease in net.

Time money rates were harder, and banks here were called upon to make large currency shipments to the interior.

Some disappointment was felt when the Southern Pacific syndicate bankers announced that about 50 per cent of the Southern Pacific stock certificates had been subscribed for by Union Pacific shareholders. It is understood the underwriters will receive the unsubscribed balance within the next fortnight. The stock will be widely scattered, as the membership consists of representative bankers in all financial centers, both at home and abroad.

In the second hour trading became very dull, with a sagging tendency. The decline in New Haven was checked by the premium demand of borrowers in the loan crowd, which indicates that the market has become oversold. Southern Pacific dropped to 83 3/4, Union Pacific to 84 1/2, Reading and Amalgamated Copper slid off easily on light offerings.

The government weekly weather report was distinctly unfavorable, indicating the continuance of a widespread deficiency of moisture and high temperatures over an extensive area east and west of the Mississippi.

Missouri Pacific lost nearly a point, while Rock Island issues were decidedly weak, the common touching 16 1/2 and the preferred 26 1/2.

Reports from the steel trade indicate that September tonnage will show improvement. Steel common was weak and failed to develop support between 43 1/4 and 42, although around the latter figures good buying turned the price for a half point rally.

The passing of the dividend on California Petroleum common had long ago been discounted by the previous decline of some fifty points. The net loss for the day was 1 5/8 points.

July railroad reports were poor. St. Paul, with an increase in gross of \$246,000, showed a decrease in net of \$163,000. Rock Island displayed a loss in net of \$402,000, and Louisville and Nashville, with a gross increase of \$242,000, only increased net some \$50,000.